

# HP NonStop Server (Himalaya) Business Continuity Customer Experiences

Moderated by Harry Scott, Carr Scott Software

Presenting:

- Barclays Bank – Phil Nye  
Principal Consultant
- Brown & Co. – Robert Cline  
Vice President,  
a division of JP Morgan Chase & Co.
- BBS Norway – John Green  
Principal Consultant



## Presentations and Challenges

- **Barclaycard UK -- Phil Nye**
  - Barclaycard's business continuity environment with emphasis on their use of TMF with ACI's Base24
- **Brown & Co. USA -- Robert Cline**
  - Brown & Co's disaster recovery model with emphasis on Indestructible Scalable Computing and ZLE
- **BBS Norway -- John Green**
  - BBS Norway's computing environment with emphasis on complete environment replication

# ITUG/DECUS 2002 JOINT EUROPEAN CONFERENCE

Phil Nye via speakerphone from the UK



## Barclaycard – BASE24

- Barclaycard – A large BASE24 Installation
  - Nearly 7 million transactions peak day.
  - Over 230 Transactions per Second
  - Around 280,000 POS Terminals
  - Switch to Contingency in single-digit minutes
- Barclaycard – A long History of using BASE24 and TMF/RDF
  - Late 1980's: Added TMF support to BASE24 POS3.0
  - Throughout 1990's: BASE24/XP – written for TMF
  - 2000-2001: Standard BASE24 POS5.3 / AutoTMF

## The Problem ?

**How to provide a contingency solution for  
BASE24 POS 5.3 and ATM 6.0 ?**

## What did we do ?

**Used 2 \* S72014 systems and stress-tested  
BASE24 POS 5.3 (Beta Release) with:**

- Golden Gate's Extractor / Replicator
- Compaq's NonStop AutoTMF

## So what did we conclude ?

- AutoTMF does add TMF support to our high-volume BASE24 configuration. We were able to stress-test a single BASE24-POS 5.3 Logical Network to 250 tps.
- We saw significant improvements in disc I/O:
  - PTLF: Entry-sequenced: DP2 writes up to 56K (=40 TPS)
  - Able to keep e.g. PTLF/ILF Alternate Keys in Cache
  - Minimises the impact of Block Splits to e.g. SAF files
- POS Settlement cutover is some 50% faster
- You can also add TMF support to your Batch programs

## Production Experiences:

- Started to migrate from BASE24/XP to BASE24-POS and AutoTMF in mid-2001. Fully live by 4<sup>th</sup> Qtr 2001.
  - NO problems experienced in production with AutoTMF.
- Because of the way AutoTMF determines transaction boundaries, we run with more TMF transactions than Business Transactions.
  - Forced us to implement RDF IMP/x v 1.2 (to eliminate RDF Receiver Transaction Status Table problems). NO problems experienced with this version of RDF – and we ship Format 2 PTLF files.
- At peak we were running with some 650 TMF txns/sec and generating some 1.4Gbytes /sec to the TMF Audittrail discs (1 MAT and 2 Auxiliary Trails).

## BASE24 and AutoTMF specifics:

We use AutoTMF to AUDIT the following files:

- P/TLFs and Alt.Keys
- ILFs and Alt Keys.
- PTDF/PRDF
- SAFs
- Database (CPF, etc.)

We don't AUDIT the following files:

- NEGs (can't FUP RENAME an audited file).
- IDF (problem with the way BASE24 handles fileinfo call – AutoTMF can now hide all details of an Audited file from an application)

- A VERY simple AutoTMF configuration. ALL GLOBAL parameter settings and [WEAK AutoTMF Isolation mode](#).
- We run multiple BASE24 Logical Networks
  - We don't RDF-protect all of these (our choice)
  - We don't RDF certain files (e.g. ILFs) – reduces Expand requirements
  - Those files not RDF'ed are configured to use Auxiliary AuditTrails



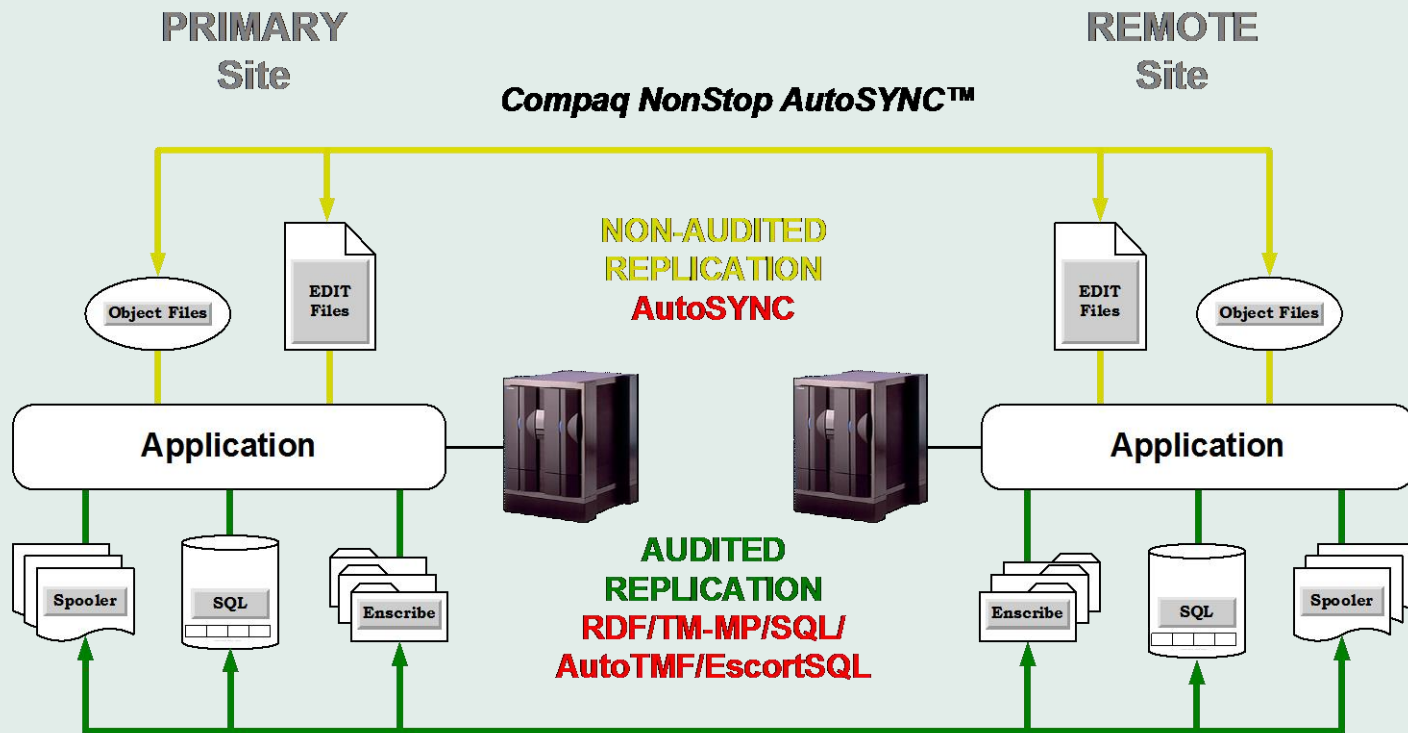
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## Brown & Co.

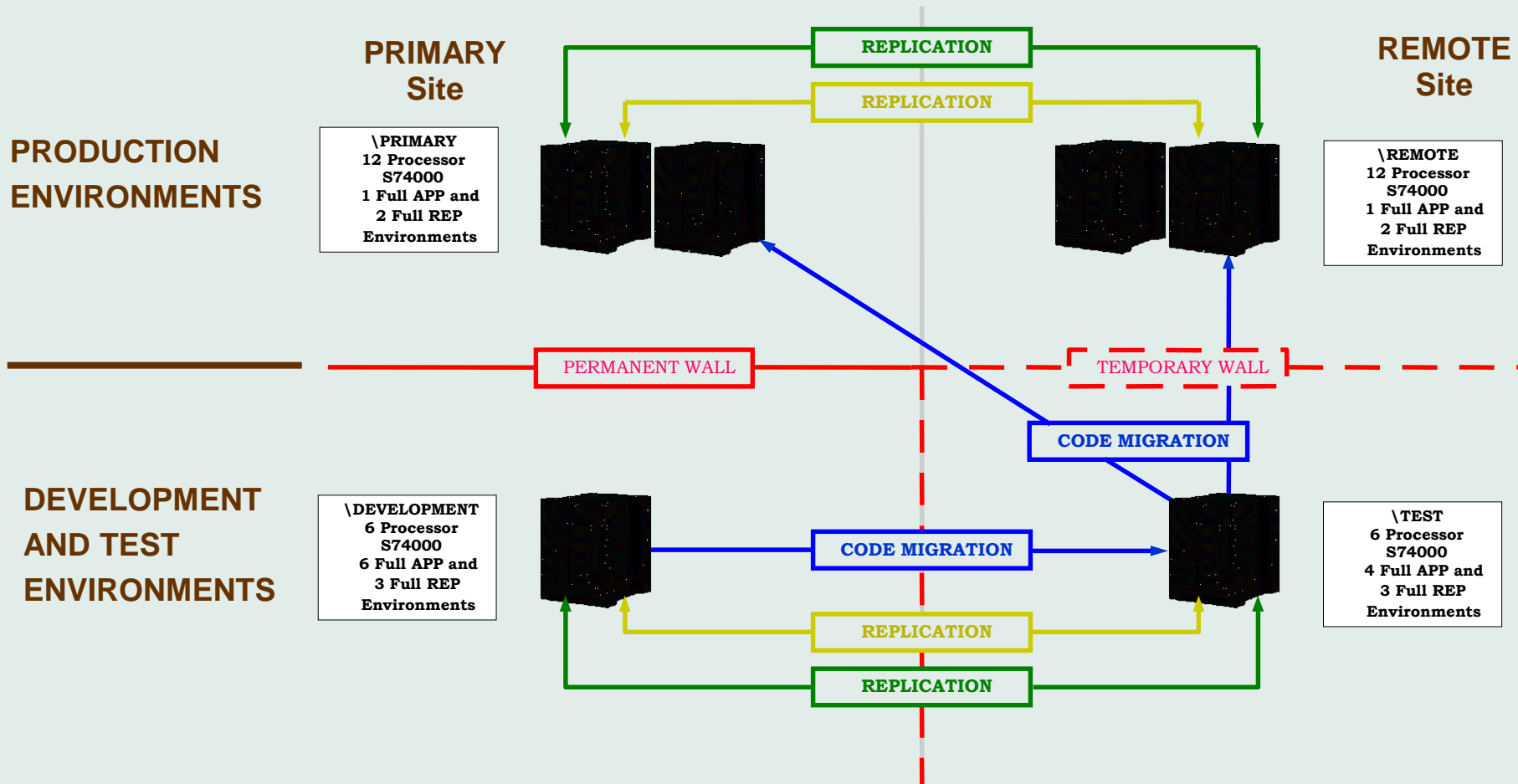
- Front and back office Brokerage system
  - SIS system (ADP/SIS)
  - Computer environment, application and procedures upgrade
  - Latest and greatest Himalaya technology
- Business continuity and business intelligence initiative
  - Sub 10 minute business continuity
  - Leverage business continuity investment for business intelligence
  - Adding TMF and SQL to an Enscribe, non-TMF, legacy 3<sup>rd</sup> party application package (ahead of the vendor)

## An Integrated Approach to Replication



**Compaq Remote Database Facility (RDF)**  
**Compaq NonStop TMF**  
**Compaq NonStop SQL (SQL/MP)**  
**Compaq NonStop AutoTMF™ Software**  
**Carr Scott Escort SQL™ and Escort RANGER™ Software**

## Project Lifecycle (PLC) and Replication from a Platform View



## Brown & Co.'s Uses RDF for...

- Less than 7 minute full fail-over with 100% data integrity to ensure Business Continuity
- Foundation for 'no downtime, no excuses' as part of ISC and CPA initiatives
- Duplicate database used for data mining as part of ZLE implementation
- Duplicate database is source for 'off-host' replication

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## Bankenes Betalings Sentral (BBS)

- eGiro system
  - Messageway (BCE Emergis)
  - MCI (Messageway Clearing Interface) & “waiting register” database
  - S74008 & S74004
- Kabal project
  - AutoTMF, AutoSync, RDF & TACL
  - First joint user of AutoTMF and AutoSync in Europe
  - First to implement DR for Messageway with RDF

## What was replicated

- Database Replication
  - Messageway – Audited and previously non-audited files
  - MCI & Waiting Register - All audited
    - Exception is one sequence number allocation file
  - All transient, intermediate files
- Application Infrastructure files



## How did we replicate the application ?

- NonStop AutoTMF / RDF
  - AutoTMF Enabled BBS to protect non-audited elements of the Messageway database
  - TAL, COBOL85, NMCOBOL, NMC, pTAL and NMCPLUS code
  - BCE Emergis supplied utility handles system name changes

## How did we replicate the application ?

- NonStop AutoSYNC
  - Source, Object, TACL macro files
  - TACL macros handle CPU number and system name changes
  - Transient files, written with Bulk I/O
  - Did not use AutoTMF for performance reasons
  - AutoSync was a key success factor for the project
    - Saves money in the longer term: No manual procedures necessary and likelihood of errors eliminated
    - TACL macros handle CPU and system name changes

## Automated Replication Procedures

- Handling “Parked Data”
  - Data repository of unstructured files
  - Index for each record with pointer to file & RBA
  - Data repository written by single process using Bulk I/O
  - Read by multiple readers as permanent extended data segment
  - Could non be audited, so AutoSync used to transfer input files to backup system
  - Input files re-processed on independent Parked Data subsystem
  - Communicating TACL macros running on primary and backup systems handle housekeeping functions

## AutoSync Usage

- Closely monitor performance
  - Consider multiple batch ID's
- Data compression should generally be disabled
- Does not replicate purges of empty filesets (may need dummy files)

## Summary

- **Barclaycard UK - Phil Nye**
  - TMF (and AutoTMF) make applications run faster and provide greatly increased data integrity (including recovery from human failure)
- **Brown & Co. USA - Robert Cline**
  - RDF provides the fastest, most reliable database replication for disaster recovery, available and is the foundation for ISC / CPA
- **BBS Norway - John Green**
  - Replicating your database isn't enough, AutoSYNC provides complete application protection from disasters, ensuring that the application environment is in place, in addition to what RDF provides for your databases
- **Copies of this presentation can be found at: [www.CarrScott.com](http://www.CarrScott.com)**

## Want More Information?

- Compaq Disaster Recovery/RDF stand (Exhibition Hall)
- Product Information (TMF, AutoTMF, RDF and AutoSYNC)
  - [http://nonstop.compaq.com/view.asp?PAGE=RDF\\_SW](http://nonstop.compaq.com/view.asp?PAGE=RDF_SW)
- Presenter Contact Information
  - Harry Scott, Carr Scott Software +1 781.934.0989  
[harry.scott@carrscott.com](mailto:harry.scott@carrscott.com)
  - Phil Nye, Cardlink Consultants +44 (1565) 614106  
[phil@cardlink.co.uk](mailto:phil@cardlink.co.uk)
  - Robert Cline, Brown & Co. +1 (617) 878-2708  
[rcline@brownco.com](mailto:rcline@brownco.com)
  - John Green, BBS AS +47 2289 8070  
[john.green@bbs.no](mailto:john.green@bbs.no)